11993-N

RSPA-1997-3100-4

BREED
Technologies, Inc.

March 6, 1998

Suzanne Hedgepeth
Director, Exemptions and Approvals
US Department of Transportation / Room 8436, DHM-30
Research and Special Programs Administration
400 Seventh Street, SW
Washington, DC 20590-0001

DEPARTMENT OF TRANSPORTATION
98 MAR 27 PM 3:52
DOCKETS SECTION

Subject: **Technical Data for DOT-E 11993-N**

Dear Ms. Hedgepeth:

The attached data is provided as requested by Cheryl Freeman. If you have any questions about the attachments I can be reached by telephone at (941)668-6035, by facsimile at (941)668-6228, *or* by e-mail at ***gamlend@breedtech.com***.

Sincerely,

David S. Gamlen

David S. Gamlen
Lead Packaging Engineer
(941)668-6035

cc: Cheryl West Freeman, P.E.

Attch

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5300 Old Tampa Highway • P.O. Box 33050 . Lakeland, FL 33607-3050
(941) 668-6000 . Fax (941) 668-6007

BREED Technologies HYBRID SIDE IMPACT INFLATOR

Per the DOT 178.65 Specification 39 the minimum wall thickness must be such that the wall stress at test pressure does not exceed the yield strength of the material of the finished cylinder wall.

$S = [P (1.3D^2 + 0.4d^2)] / (D^2-d^2)$

For the current production inflator (P/N' 97800110, 97800100, 97800000 and 93800200) a service pressure of 5000 psi is used:

P = Test pressure = 6250 psi for DOT (7900 psi for internal requirements)

D = Outside diameter = 24.13mm = 0.950"

d = Inside diameter = 21.14mm = 0.832"

For internal test pressure requirements:

$S = [7900 (1.3\{0.950\}^2 + 0.4\{0.832\}^2)] / (0.950^2 - 0.832^2)$

S = 54,481 psi

For DOT test pressure requirements:

S = 43,102 psi

The NSS pressure vessel (P/N 44800210) has an ultimate Tensile Strength of 95,000 psi and a Yield Strength of 80,000 psi minimum, thus meeting the strength requirement.

The attached pressure trace shows a "typical" hydroburst test for the production pressure vessel.

BREED

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March 13, 1998

Mr. James O'Steen
US Department of Transportation / DHM-20
Research and Special Programs Administration
400 Seventh Street, S.W.
Washington, DC 20590-0001

Subj: **Request for Emergency Processing of Exemption Application DOT-E 11993-N.**

Dear Mr. O'Steen:

Pursuant to the requirements of 49 CFR 107.117, BREED Technologies, Inc. requests emergency processing of exemption application DOT-E11993-N, dated October 27, 1997, Emergency processing is necessary to prevent significant economic loss that can not be prevented if the application is processed on a routine basis, as stated in 49 CFR 107.117(a)(2).

Exemption application DOT-E 11993-N requests approval to manufacture, mark and sell non-DOT specification cylinders for use as components of automobile safety systems, Due to increased customer demand and shortened delivery schedules by our customer Audi, we are at maximum capacity on our production line and have been forced several times to charter air transportation to prevent shutting their line down. Quick approval of the application will allow increased line production so that we may fulfill our customers demands and return to normal transportation modes. Additional production equipment has been ordered, but will not be operational until September 1998.

The following is the economic impact:

Under current conditions, we are running two, 10 to 12 hour productions shifts, six days a week. Also, one 6 hour sift is working every other Sunday. This production schedule is resulting in an average of six shipments per week of eighteen, (14 Kg) boxes per shipment. If any problems are encountered which slow down or stop production, we are forced to charter air transportation.

Transportation Cost:
Current: Due to the need for prompt reliable deliveries, we are currently using FedEx at a rate of $3.06 per Kg.

14Kg/box × 108boxes/week × $3 .06/Kg = $4627 per week

Additionally, we have **made** five **charter** shipments **at** a **cost of $40,000 each for a total** of **$200,000**. **Amortized** over the 30 weeks that we have been in production of this product, our **weekly** transportation cost is as follows.

$200,000 ÷ 30 weeks = $6667 per **week**

$4627/w& + $6667/week = $11,294/week

With Exemption: Once we have caught up to demand, we plan to make one shipment per **week** with **SwissAir at** a rate of $1.50 per Kg. Charter flights will not **be** necessary because we will **have** the time to compensate for any unforseen problems or down time.

14Kg/box × 108boxes/week × $1.50/Kg = **$2268 per week**

Therefore, **the proposed exemption will result in a transportation savings of**
$1 1,294/week(current) - $2268/week(proposed) = **$9026 per week**

Labor Cost:
Additional labor cost is being incurred by the overtime required to maintain production quantities. As stated earlier, we **are running two-10** to *12* hour production **shifts,** six days a **week** and one-6 hour **shift every** other Sunday. The **labor team** per **shift** consists of 10 line workers, 1 **line leader,** 1 tech. support person, 1 safety representative **and** 1 material handler. For **calculation purposes,** minimum weekly overtime per person consists of 2 hours per day **Monday** to Friday, **10** hours **on** Saturday and **3** hours **on** Sunday.

Current: (overtime cost)

Overtime rates for the following employees, except the safety representative, are at 1.5 times standard burdened rates Monday through Saturday and 2.0 times standard burdened rates on Sunday.

LINE WORKERS:
$9.30/hr. × 1.5 × 20 people × 20 hrs. = $5580 **Mon**. through Sat.
$9.30/hr. × 2.0 x 10 people × 3 **hrs.** = $ 558 **on** Sunday
For a total of $6138 per **week** in overtime cost.

LINE LEADER:
$10.23/hr. × 1.5 × 2 **people** × 20 hrs. = $614 Mon. through Sat.
$10.23/hr. × 2.0 x 1 person × 3 hrs, = $ 62 on Sunday
For a total of $675 **per week** in overtime cost.

MATERIAL HANDLER:
$11.92/hr. × 1.5 × 2 people × 20 **hrs.** = $715 **Mon. through** Sat.
$11.92/hr. × 2,0 x I **person** × 3 **hrs.** = $ 72 **on** Sunday
For a **total** of $787 per **week in** overtime cost.

TECHNICAL SUPPORT:
$16.10/hr. × 1.5 × 2 people × 20 hrs. = $966 Mon. through Sat.
$16.10/hr. × 2.0 x 1 person × 3 hrs. = $ 97 on Sunday
For a total of **$1063 per week** in overtime cost.

SAFETY: Overtime compensation is 1.0 times standard burdened rate Monday through Sunday.
$17.88/hr. × 1.0 × 2 people × 20 hrs. = $715 Monday through Saturday
$17.88/hr. × 1.0 × 1 person x 3 hrs. = $ 54 on Sunday
For a total of **$769 per week** in overtime cost.

Therefore, the **minimum** total **overtime** cast **is**

Line Workers	$6138
Line Leader	**$ 675**
Mtl. Hndlr.	**$ 7 8 7**
Tech. Supt.	**$1063**
Safety	**$ 769**
Total:	$9432 **per week**

With Exemption: There is no planned overtime for production once the exemption is approved.

Potential Economic Loss:

Transportation $9026 + labor $9432 = **$18,458 per week** as a minimum. As an example, if emergency processing of exemption application DOT-E 11993-N reduces approval time by 10 weeks, a minimum of $184,580 will be saved.

Additionally, our customer has threatened to cancel the existing business if we do not increase our manufacturing capacity.

If DOT-E 11993-N is approved on an emergency basis, we also request that it be converted to a permanent exemption valid for two years.

If you have any questions or require additional data to process this request, please contact David Gamlen by telephone at (941)668-6035, by facsimile at (941)668-6228 or by e-mail at *gamlend@breedtech.com*.

Sincerely,

David Gamlen
Lead Packaging Engineer

copy: J. Suzanne Hedgepeth
Director, Office of Hazardous Materials Exemptions and Approvals

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INFLATOR LAB NICOLET DATA ACQUISITION SYSTEM

BREED TECHNOLOGIES
VERSION Beta 1.12

TEST INFORMATION:

REQ. NUM: 01156101
DATE: Thursday, March 05, 1998
TIME: 9:38 AM BAY 05
OPERATOR: 08129,Eric Womack
SOAK TEMP: AMBIENT 22 DEG C
PROD TYPE: NO LIMITS

BAY CONDITIONS:

BAY TEMP: 74.00 deg F
BAY HUMIDITY: 41.00 %

CHANNEL 1 DATA:

XDUCER1 TYPE: NOT USED
XDUCER1 CAL: 0.001000
XDUCER1 SN:

CHANNEL 6 DATA:

XDUCER6 PIPE: BURST PRESSURE
XDUCER6 CAL: 0.00019600
XDUCER6 OFFSET: 1.020 Volts
XDUCER6 SN: a2595002

CHANNEL 2 DATA:

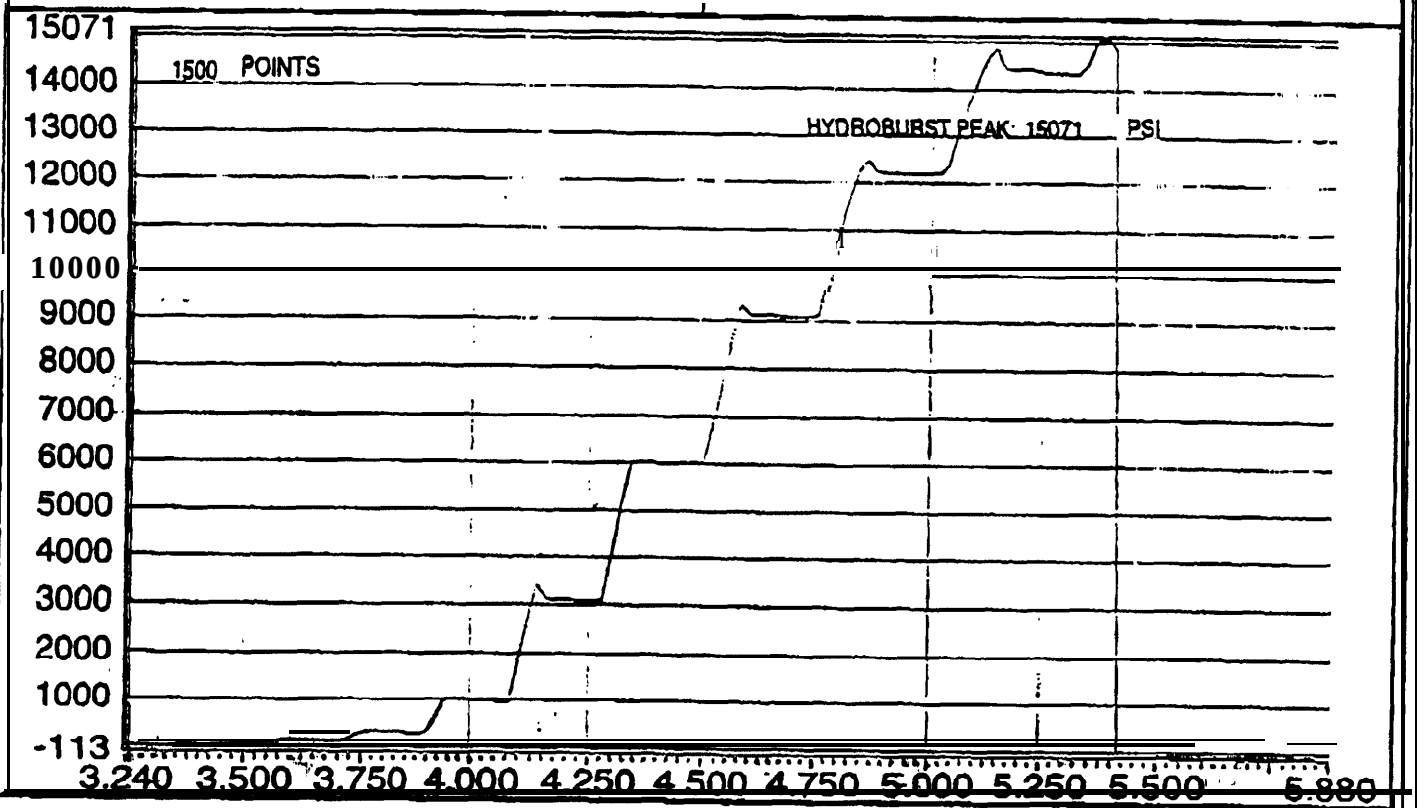
XDUCER2 TYPE: NOT USED
XDUCER2 CAL 1.000000
XDUCER2 SN:

PRE-BURST COMMENTS

EVALUATE HIGHLAND DIFFUSERS WITH THIN MATERIAL. TWO HYDROBURST UNITS. TWO UNITS PROOF TESTED 8 8C00 PSI.

POST-BURST COMMENTS

SIDEWALL FAILURE.



NOTE: TIME UNITS ARE IN SECONDS

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